MUSEUM STORIES FOR CHILDREN

Presented by

The James Nelson and Anna Louise Raymond Foundation
for Public School and Children's Lectures

FIELD MUSEUM OF
NATURAL HISTORY

Series XXV, Number 1
October 5, 1935

FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
CHICAGO

112264

NORTHERN SQUIRRELS

Many of the mountains of northwestern Canada and Alaska are heavily wooded. Dense forests of spruce, cedar and pine shelter the animals and birds and furnish their food. Squirrels thrive in the fragrant cedar woods. Some prefer the trees for their homes while others like the rocky hillsides and open places.

The true squirrels are those that live in the trees. A tree squirrel has no cheek pouches. It has medium-sized ears and a bushy tail. The tail serves as a parachute to land the squirrel safely, should it fall. The tail is also a shield during battle, a sunshade in the daytime and a blanket at night. The name squirrel means "shade tail."

The little Red Squirrel or Chickaree is the most abundant of all the northern tree squirrels. It is a merry, chattering imp; it dashes about, whirling up a tree and down again. It perches on a branch to scold but even then it is not still—it jerks its lovely tail up and down as if for admiration.

This busy squirrel collects cones for winter food supply. However, it never buries useless husks. It opens the cones and bites off the scales; the remaining seeds are carefully stored in a nest or several are buried together under ground. Mushrooms are gathered and hung in a tree or spread on the ground to dry in the sunshine; later, they are packed away in the nest with the seeds.

Even winter does not put an end to the Red Squirrel's fun. Trails or tunnels are made in the snow so the squirrel can go easily from tree to tree. The temperature must drop many degrees below zero to keep this Chickaree in its nest.

The Big Flying Squirrel likes the heavy timber near the Pacific coast. Contrary to the sun-loving Red Squirrel, the Flying Squirrel sleeps away the daytime and frolics at night. Its tail is flat and a membrane connects the front and hind legs on either side of the body. Thus, as the squirrel jumps from one tree to another the tail and membranes act as wings. Consequently, the squirrel is a glider and not a true flyer. It seems to enjoy this type of flying; it jumps from the top of one tree and sails gently toward the base of another, only to scramble up and glide down again. This flight is absolutely silent.

The Woodchuck is one of the squirrels that lives on the ground. He can climb a tree but with difficulty, and so prefers to burrow in the earth for his home. He is brave and courageous in battle; however,

he goes about his own business and fights only when bothered. He spends most of his life in one small region, sunning himself and feeding on grass and clover. It is said "he eats to give him strength to dig holes, and then digs holes to give him an appetite for more clover."

The Hoary Marmot is the whistler of the squirrels. As these squirrels leave their hillside burrows to gather berries, roots and seeds, one marmot stands guard on a rock or high hill. If an enemy should approach, this marmot sentinel gives the alarm, a shrill whistle, which can be heard for at least a mile. This signal is repeated from one marmot to another until all have been notified of the danger and have disappeared into their burrows.

Several small squirrels such as the Gray-headed Chipmunk and the Yukon Ground Squirrel make their homes in the far north. These little squirrels have cheek pouches and rather slender tails. They are not easily seen except when they stop, sit up on their hind legs and peer about. All through the warm sunny days they scurry around gathering root bits, seeds and particles of grain. As they pick up the food it is stored in their cheek pockets. It is said that occasionally a chipmunk stuffs his pockets so full that he must turn his head sidewise to go through the doorway into his underground burrow.

By the end of September the storage rooms beneath the ground are well filled. A few chipmunks and ground squirrels doze in the late autumn sunshine before they retire to their underground rooms. Finally all have entered their burrows; there, safe against most enemies and frost, they roll themselves into little balls of fur and go to sleep for the winter.

The marmots and woodchucks take to their holes. The tree squirrels may like the cold northern winters but the squirrels of the ground do not; they slumber deeply and peacefully until spring once more brings warmth and awakens all sleeping creatures.

MIRIAM WOOD, Guide-lecturer

Note: In Hall 15 you may see an exhibit of squirrels. Both tree squirrels and ground squirrels of various kinds are shown.

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STEPHEN C. SIMMS, Director

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FIELD MUSEUM OF NATURAL HISTORY

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
CHICAGO

FISHES THAT WALK, CLIMB AND FLY

Fishes have lived upon the Earth for a longer period of time than any other back-boned animals. Most of them spend their entire lives as swimmers, taking air from the water that passes over their gills. A few kinds have lunglike air sacs and must come to the surface at regular intervals or they will drown. Some have fins that serve as feet when the owners desire to walk about below the surface or out of the water; others have powerful side fins which act as wings.

A walking fish common in our region is the so-called Mud Minnow found in roadside and field ditches. When the home area begins to dry up, this little fellow buries itself in the ground in a kind of cist, or case, and there remains until the rains come again. It is one of the few fishes that can stand straight up and down for any length of time. When alarmed, the Mud Minnow gives its body a quick twist and disappears instantly into the mud, tail first. When walking on the mud the fins press downward, leaving tiny crescent-shaped tracks. This fish is really a cousin to the pike and not a minnow at all.

The most famous of the walking fishes live in the Orient, and are known as the Mud Springers and Rock Skippers. The first are strange looking with greatly puffed cheeks and very high eyes which can be raised and lowered together or one at a time. They live in crab burrows in the mud which is covered with water when the tides come in. When attacked the Mud Springers make for these burrows in a series of short jumps or springs. The springs are not very long but they come so rapidly that it is almost impossible to catch the fish. The Springers are about nine inches long and feed upon the crabs and shrimps brought in by the tide. Between tides, they are frequently seen on mangrove roots waiting for the next tide and the food that it is sure to bring.

The Rock Skippers are also small. They skip up the straight surfaces of the rocks with surprising ease. Like the Mud Springers, they bend the tail to the left, straighten the body suddenly and leap forward. The distance covered may be six inches or it may be eighteen. After a high wave has receded from their rock, they will be seen to be clinging tightly to the slippery surface. Occasionally, one will hop to the top and sit in the sunshine, as if just for the fun of it. The Skippers are light gray in color, have red eyes and queer little crests on the top of the head. When frightened they give a spring and skim across the water in a series of short skips until they reach a place of safety.

A fish well-known to the children of India is the Climbing Perch. When the food in one pond or ditch gives out, it goes overland in search of another supply. It hikes or hitches itself along with the aid of stiff spines in its gill-covers, its raised scales and its strong pectoral fins. Frequently, one climbs up the slanting trunk of a palm tree for the delicate morsels hidden there. Should it be out of the water for some time, it moistens its gills with water from a special bag located near the gills. The Climbing Perch is considered very good food. Men especially desire it, as they think it makes them strong. As this kind of perch can live out of water for five or six days, the housewife can select her fish from the market-man's earthen jar and be sure her purchase is fresh. In our country the Climbing Perch must be kept in a covered aquarium or it takes a stroll.

Among the Gurnards are several with front fins large and strong enough to hold the body up in the air when the owners desire to escape from their sea enemies. The fins are really not wings but parachutes. Occasionally, they are seen to work up and down in vibration and this has led some people to say the fish can really fly. None of the Flying Gurnards can rise very high above the water, but they often skim along for some distance before gliding down tail first. Ships frequently pass through large schools of real Flying Fish, which spring out of the water in all directions. While in the air these fish look like dragonflies. The largest and strongest flier is the California Flying Fish of the Pacific Ocean, but the Atlantic and some of the smaller seas have very interesting types, all of which are sought for their food value or for their fantastic appearance.

The fishes described above are all worth studying and give us many proofs that Mother Nature provides for her children regardless of where they live.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall 18 may be seen three types of flying fish and several types of walkers. Notice especially, the "sea-robin," the "bat-fish," and the "anglers." The latter have strange lures lying in a cavity on the face. Across the hall from the walkers are the lungfishes of Africa and South America. This type of fish has been living upon the Earth for so long that it is known as a "living fossil."

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STEPHEN C. SIMMS, Director

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FIELD MUSEUM OF NATURAL HISTORY

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
CHICAGO

HUMMINGBIRDS

Hummingbirds have for many years attracted attention and admiration because of their beauty and variety in form and color. Audubon called them "glittering fragments of the rainbow." The Aztec Indians in Ancient Mexico were so delighted with these alluring bits of birds that the capitol city, Tzinzunzan, was named for the number of hummingbirds in the vicinity. Superb capes were made of the brilliant feathers and exquisite pictures were embroidered with them.

There are about 500 different species of these birds, all of which can be found only in the New World. They are most abundant in the northern Andes of South America. However, seventeen different kinds live in North America and of these only one, the Ruby-throated Hummingbird, can be found east of the Mississippi River. Hummingbirds live as far south as Tierra del Fuego in South America and as far north in the summer as Cook Inlet in Alaska.

Most hummingbirds are very small although there are a few fairly large ones. The largest is the Giant Hummer, eight and one half inches long. Princess Helena's Hummer from Cuba is the smallest, measuring two and one quarter inches; its entire bulk is less than the head of the Giant Hummer.

The birds are active and extremely swift. They dart like arrows—forwards, backwards, and sidewise, or they poise for an instant in midair. The feet are so small and delicate that they are used only for perching. A hummingbird cannot walk on a flat surface by means of its feet and legs alone—it usually hops sidewise and sometimes uses its wings as crutches.

Hummingbirds are curious, brave and ferocious. A mother hummer does not hesitate to protect her eggs or youngsters. She fearlessly attacks a bird much larger than herself by whizzing like a bullet at the intruder. She has even been known to tap on the head of a person who comes too close to her nest.

Hummingbird nests are marvels of beauty and sheer delicacy. The nest is usually a deep, cup-shaped one made of plant down felted and bound together with spider webs. The female Anna Hummer fastens and works the first webs together with her bill and then she molds the shape of the nest with her breast. Before the nest is entirely finished one egg is laid. By the time the second egg arrives the nest is completed except for the decorations on the outside. Lichens, moss, feathers and bits of leaves are added even after the two babies hatch. The

baby hummers resemble bumblebees. The Black-chinned Hummer is said to make a nest which "both for simplicity of material and perfection of design, is quite the most exquisite in North American hummerdom." This nest is elastic and as the babies grow the nest stretches to accommodate them.

These birds feed on insects and nectar from flowers. When a hummer poises above a flower and thrusts his bill into its very heart he may be getting either insects trapped there or the honey. The bird's tongue is unusually long and is forked or divided about half way; this, no doubt, aids both in sucking nectar and in catching insects.

It is generally thought that the hummingbirds are silent except for the buzz of the rapidly moving wings. However, the Vervain Hummer of Jamaica is said to have a weak but sweet song. Other hummingbirds chirp or twitter, especially when alarmed or excited. Several male hummers have special courtship calls to accompany their aerial dances. For instance, the Costa Hummingbird puts on a remarkable show for the female, who perches quietly on a branch. He goes up to a distance of perhaps 150 feet and then hurls himself down, uttering a shrieking sound like a bullet. The noise becomes louder and louder as he zips down past the lady hummer. It looks as if he might crash on the ground when suddenly he sweeps up and goes dizzily on high only to whiz down again. He repeats the performance several times before he finally becomes so fatigued that he whirls drunkenly out of sight.

Our own Ruby-throat demonstrates typical hummingbird habits. It is curious, familiar, and bold. If excited or angry it becomes a perfect little demon—with glowing throat extended it darts through the air. Then in contrast the little bird rests on a branch and peacefully strokes its feathers; a wing is stretched out and each quill feather is pulled through the bill and smoothed.

With just these bits of information it is easy to believe what a famous bird man said of the hummingbirds: "They constitute the most charming element in the wonderfully varied bird life of the New World."

MIRIAM WOOD, Guide-lecturer

Note: In Hall 21 there are two exhibits of hummingbirds. Those from North America are shown on the north side of the Hall and on the south side are those from South and Central America.

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FIELD MUSEUM OF NATURAL HISTORY

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
CHICAGO

ESKIMO HOMES

Eskimos live all along the northern coast of North America from Alaska to Labrador. They are scattered over the nearby islands, they live in Greenland and a few are found in north-eastern Siberia. In spite of the fact that explorers and groups of people have visited them again and again, many Eskimos have changed their ways of living very little. They were well named many years ago by Indians who noticed, with disgust, that their meat was eaten raw. Thus, the name Eskimo means "raw meat eaters." Wood is so scarce in the far north that fires are seldom built. Therefore it was, and still is, much simpler to eat the meat raw.

The Eskimos, especially in Greenland and parts of Labrador, live very much as their ancestors did. In the winter they make their houses with the only material at hand—blocks of snow. The size of a house depends upon how many people will live in it and how long they intend to use it. If the igloo is made for an over night lodge only, it is small and simply built; two men build such an igloo in a couple of hours. If, however, the igloo is to be a permanent home for several weeks or months, it is larger and has more protection against the cold.

To build such a permanent igloo the men start by cutting rectangular blocks of snow with large snow knives. They place the blocks in a circle about nine feet in diameter with just one small opening to form a doorway. The blocks of the next layer are placed so that the cracks between the blocks do not come one above the other. As the walls are built up, the cracks are plastered with snow and the igloo begins to look like a half moon. When finished, an average sized igloo is about six feet high in the middle. Sometimes the Eskimo cuts a piece of fresh water ice and fits it into the igloo top or above the door for a window.

The doorway is just a hole, large enough for one person to crawl through. A block of snow is cut to fit the doorway but it is placed there only at night. The opening is protected by a low, covered entrance or a tunnel several feet in length.

Inside the one room igloo a snow bench fills at least half the room. In some houses it is made to fit all along the circular wall. This bench is covered with moss and animal skins; it is used as a work place in the daytime and as a bed for all at night.

The only heat in the room comes from a large, saucer-shaped lamp. It is the mother's duty to keep the lamp filled with oil and to see that

the fiber wick hanging over the side, soaks up the oil and burns evenly. A framework hangs over the lamp to hold a cooking pot. There snow is melted for drinking water and what little cooking is necessary is done over the lamp. Above the cooking pot, the framework serves as a drying rack on which to spread out wet boots, mittens and coats.

Gradually the heat from the lamp melts a little of the inside snow walls. To prevent this from dripping on the people, a skin lining is made for the igloo and fastened to the walls. The cold air around the top of the igloo usually freezes the melting snow again, making it harder with ice. Soon the house becomes strong enough to store sleds and dog harness on the top, out of reach of the ever hungry dogs.

With the coming of spring and warmer weather the snow houses begin to melt and cave in. The Eskimos are always glad to move out into summer shelters. This season is a time of freedom with no storms and dark days to keep them inside their homes for weeks. The Eskimos joyously put up their skin tents; the frameworks are made of driftwood or whale bones and are covered with animal skins. The tents are small and can be moved easily as the people wander from place to place. They hunt, fish, play games and visit with each other.

Some Eskimos, living in Alaska and parts of Canada and Labrador, have been able to trade with the white people for many years and have adopted their ways of living. Alaskan Eskimos never did use snow houses except as temporary shelters while on hunting trips. Now even that use of the snow house has vanished there. Where wood is found, homes are fairly well constructed frame houses. Otherwise, shelters are made of stones and soil. Such a shelter is often like a cave, the top of which is a framework of driftwood filled in with rocks and dirt. These Eskimos also use many skin tents in the summer time.

This free summer life is one that all Eskimos love. They like to travel around and visit with each other; they are eager for news of the outside world. These generous people laugh so merrily at stories and bits of news that you cannot help but laugh with them and think of them as the happiest people in the world.

MIRIAM WOOD, Guide-lecturer

Note: Museum exhibits of Eskimos may be found in Hall 10.

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FIELD MUSEUM OF NATURAL HISTORY

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
CHICAGO

SOME INTERESTING AFRICAN PLANTS

Africa has many interesting features. It differs from the other continents in having no extremely cold areas. The surface is divided into large deserts, plateau, fertile grasslands, high mountains and lovely lakes. Each has its own types of plants.

Many portions of the continent have been explored and settled; others are still regions of beauty providing homes for herds of grazing animals and for some of the strangest plants known to man. Our own homes make use of many of Africa's valuable plants and the florists have introduced some of its rarer and more fantastic specimens.

The "tree of life" to the dwellers of the northern deserts is the date palm. No picture of Egyptian ruins seems complete without at least one of these graceful trees, and it serves both man and beast. Its leaves often form the only shelters used by the people. Many kinds of date palms are seen as the visitor passes from one oasis to another. Sometimes, wine may be made from the sap and the very young leaves eaten as we do cabbage, but the fruits and crushed stones are too valuable as food to destroy young trees. The Arabs make many kinds of dishes in which the date is the chief part.

The doum palm, the only branching palm, grows in the central part of the continent. This tree has been called "the gingerbread tree" because the fruits have a fibrous rind having a taste similar to gingerbread. The important raphia palm is found along the eastern coast of tropical Africa. In Madagascar its fibers are woven into beautiful cloth and mats as well as into mosquito nets. This is the plant which supplies the "raffia" used by gardeners and florists. Its seeds contain a bitter oil. These are frequently crushed and thrown on the water to numb fish. The natives then go out in boats and gather in the needed food.

In swampy areas about the Nile and its branches may be seen the papyrus, a reed fond of either running or stagnant water. All who have studied about Egypt know how important this plant was to the ancient Egyptians. It shared honors with the lotus found in the same kind of habitat. Temple pillars were carved to represent its stems and blossoms; the split, flattened stems were made into covers for the dead before the days of mummying the bodies and into household objects of many kinds. The most noted use to which it was put was for the making of paper on which the hieroglyphic records were kept.

Africa has several kinds of food plants with which we are familiar. Coffee which has become a world beverage owes its origin to Africa, where about fifty kinds have been found growing wild. The so-called Arabian coffee from the highlands of Abyssinia is now grown in most of the famous coffee districts of the world. A lowland coffee from Liberia is next in importance. The Abyssinian word for coffee is "Kaffa."

Sorghum, or Kaffir corn, is raised by the natives of southwestern Africa just as we grow corn. This tall, slender corn-like plant without ears is raised for its grain and for the sweet juice of the stalks. A common sight in the land is a child sucking a bit of stem as we would an all-day-sucker. Sorghum has been introduced into many lands. In our country syrup is made from the sweet juice and the stalks are mixed with corn for cattle. The animals seem to like it too.

We frequently hear the word "yam" and confuse it with sweet potatoes. The yam really grows on a vine and is not at all related. To a great many Africans the yams are the chief food. These tubers are much larger and more fibrous than our sweet potatoes.

On the high plateau are found many trees like our own, but there are many others that are quite different. African mahogany is very valuable. The only other places having real mahogany are North and Central America. The ebony and zebrawood have interesting colors and marks. In the dry areas are found several odd trees and plants having few or no leaves and greatly enlarged trunks and stems in which to store water for use during the dry season. The baobab or "monkey-bread tree" lives to be of great age. When old, the trunks have immense girths, the branches are short and stumpy and the leaves are tiny and few. In the same regions may be seen the strange African milkweeds which look like the cactuses of our country. They may be found hiding under low shrubs or clinging to the faces of rugged precipices. Some have delightful scents; others an offensive carrion odor.

Thus does Africa claim a share of the world's unusual and valuable plants.

MARGARET M. CORNELL, Guide-lecturer

Note: In Halls 25, 27, and 29 on the second floor may be seen many of the plants mentioned. Hall E on the ground floor has many exhibits showing the Madagascar use of raphia.

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FIELD MUSEUM OF NATURAL HISTORY
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THE STORY OF THE CAVES

Oh, the thrills of a trip through some famous cave! With what awe we enter its dark interior to gaze upon its fantastic formations, and to shudder, perhaps, when a strange sound issues from some unseen crevice close at hand, or a blind fish, crayfish or cave spider is seen. And how odd the masses of snow-white fungi hanging from the under side of a foot-bridge.

We know how caves are formed and visit them to see the marvelous work of water; the peoples of another age looked upon them as places of mystery. Because they did not understand their formation, caves were thought to be the homes of spirits and demons. To them the weird noises were voices of gods and many an offering was hurled into the depths to silence the angry beings.

Surely, the men of prehistoric days must have been desperately in need of shelter when they first sought and used the caves. At first, only the outside caverns were used as homes. They were close to the great open spaces. Later, the people penetrated far within and in the dark recesses held their religious ceremonies safe from enemy attacks. It is in such places that we see the fine red and black drawings upon the walls and the carvings of animals. Here, too, are the clay modelings of bison and cave bear. We are glad the Stone Age people did use the caves, for the darkness and accumulated debris on the floors have preserved for us the bones of the animals used as food and the cave-man's tools and weapons of flint, bone, ivory and shell. Some human bones have been found with the other materials.

The Greeks called caves "Antros" which means nostrils or breathing holes. Their caves had many uses. Some were shrines; others treasure houses or places for the keeping of sacred relics. The famous oracle of Apollo at Delphi was located in a cave. The wisps of smoke and whiffs of gas that issued from the tiny crevices were used by the priests for the interpretation of the messages of the gods. Even workers of black magic sought caves for their evil doings, and legend says that Aeolus, the wind god, kept his winds in a cave.

Modern man too makes use of caves. Several in the southwestern part of our own country have served as treasure houses and as places for the keeping of sacred Indian objects. In mountainous regions caves are often used as workrooms, as store-houses and even as barns for the animals; in France many of its famous cheeses are ripened in caves.

The largest and best-known caves are found in limestone areas where the water has dissolved the calcite, but caves are found in other areas. Sometimes, the surface of a flowing lava stream cools more quickly than the inside and forms a hard crust with the lava still running underneath. In time the flow ceases and a cave has been formed. Such caves are common in volcanic regions. Exquisite caves are often found in great glaciers, and the mighty oceans are constantly eating away the rocky walls and leaving caves.

The most beautiful formations in limestone caves are the stalactites and stalagmites. When water dissolves the mineral through which it has passed, it flows along until it reaches a cavity. There it may cling for a time to the roof of the opening. If the drops are far apart, then the water is apt to evaporate and leave a ring of carbonate. Thus ring on ring may be deposited until a great icicle-like form hangs from the ceiling of the cavity. When much water flows, then part of it drops to the floor and other forms are built upward. Often the stalactites and stalagmites meet forming great pillars, or other rock masses resembling trees, or persons, or objects such as the Titans might have used.

Carlsbad Cavern in New Mexico is one of the world's largest caverns. It has one enormous stalagmite known as the "Giant Dome" which is 16 feet across and 62 feet high. Because of this cave's great number of fantastic formations and its pillars and frescoes of onyx, it has been made into a national park, as has Mammoth Cave in Kentucky. The latter has several hundred miles of connected galleries with lakes, rivers and waterfalls. Luray Cave in Virginia is noted for its brilliantly-colored stalactites.

Some caves are famous for unusual features. Iceland has "singing" caves and Australia has the Jenolan Caves in which are some pure white stalactites. A few caves have forms which give forth musical sounds when struck lightly.

Wherever located, caves are always worth visiting.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall C are cases showing the life of the Cavemen of the Old World; in Hall 35 are colored pictures of Luray Cave, many kinds of stalactites and stalagmites and a model of a natural bridge showing the result of the action of water.

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
CHICAGO

INDIAN TIPIS

A tipi is a skin covered tent formerly very common among the Plains Indians of North America. A few Indians of the woodlands made small tipis and covered them with birch bark but they were uncommon. The Plains Indians were roving people and the movable tipis suited their type of life. Often they made fairly large tipis; one tipi covering consisted of eighteen buffalo skins.

These Plains Indians did not always live in tents. Many years ago, before the white people came to this country, the Indians had no horses and thus were not able to wander so much. They had to travel on foot and that was slow and hard. They could not follow the herds of buffalo except for short distances. Hunting was difficult and, no doubt, it was often unsuccessful. Buffalo skins were scarce and the few they did have were needed for robes; certainly there were no extra skins to make into tipis. These Indians had to live a more settled life and they lived in earthen lodges.

Then a wonderful thing happened—the Spaniards brought horses into this country. Gradually the Indians, through trading, began to own a few horses and with these they were able to follow along behind the herds of buffalo. They soon had plenty of meat to eat and many buffalo skins. They left their earthen lodges and began to live in skin tipis because they could be moved so easily. Finally the tipi became the typical Plains Indian home.

The Indian women always took care of the tipis. They made them, put them up and took them down. The strength of the tipi depended largely upon the strength of its poles. The number of poles varied from fifteen to thirty according to the size of the tent. The women often travelled miles to get the right kind of wood for these poles. Cedar or pine wood made fine, straight poles. After the women cut the trees they trimmed off all the branches, removed the bark and smoothed the wood so that the pole was about the same diameter at both ends. The length of the poles, as well as the number, varied among the different tribes. The Crow Indians used long poles, thirty to forty feet in length. Four of these were set up first and then the others were placed around this foundation. The Cheyenne used shorter poles and only three for the foundation. Whatever the arrangement, the poles, set up without the tipi cover, had to "season" in the rain and sunshine so they would not sag under the heavy skin covering.

The same poles could be used for many years but a new tipi covering had to be made at least every two years. The women usually worked together on the tipi covers and most of them were made in the early spring before the summer festivals. They cleaned the buffalo skins and sewed them together according to a regular tipi pattern. Occasionally they decorated the cover but more often the tipi was left without designs.

When the poles were well seasoned and the skins sewed together, the women lifted the cover onto the framework and pegged the edges carefully to the ground. The tipi cover was fastened together down the front with "skewers" and last of all the smoke hole was adjusted. This smoke hole is a slit opening just above the fireplace and it varies in length among the different tribes. It is protected from the wind by two skin flaps or "ears"—one on either side of the slit. Each flap is held up by a pole on the outside of the tent. The pole can be moved and the flap adjusted according to the direction of the wind.

A Crow tipi often has streamers fastened on the long poles soaring above the dwelling. Those are its only decoration. The Crow Indians have always been proud of their tipis—and justly so. Because of the long, straight poles and the simplicity of these tipis, they have often been called the most beautiful of all Indian lodges. Even today, that same pride is evident and although cow hides or canvas takes the place of buffalo skins, the tipis are still in use.

The Cheyenne tipis were said to be the sturdiest of all the tents. The poles were shorter than those of the Crow tipi but there were more of them. The tipi covering was more carefully pegged to the ground to resist strong winds and storms. These Cheyenne tipis usually faced east and the seat of honor was opposite the door at the back of the tipi.

And so in spite of ever changing life, some Indians have kept their tipis. One student of Indian culture was so impressed at the sight of these tipis that he said, "The Crow tent, with its white cone, its trim flaps, its double sheaf of poles and trailing streamers, is the stateliest dwelling ever nomad used."

MIRIAM WOOD, Guide-lecturer

Note: Models of Indian tipis, poles, pegs and skewers may be seen in Hall 5.

Save your Museum Stories. You will find them useful for looking up things you may want to know.

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STEPHEN C. SIMMS, Director

MUSEUM STORIES FOR CHILDREN

Presented by

The James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Lake Michigan
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A STRANGE MEMBER OF THE TURTLE FAMILY

Next to snakes, the reptiles best-known to American boys and girls are the turtles. These lowly creatures can boast of an ancestry that goes back to the time when Mother Nature was trying out her skill on the making of dinosaurs.

Just as she made different kinds of dinosaurs for different kinds of areas and food conditions, so she varied the build of their cousins the turtles. Fossils found in many parts of the Earth give us a good history of the earliest forms. It is thought that the first turtles were marsh dwellers and that the soft-shelled, low-backed fresh water forms and the high-backed land tortoises have come from those ancestors.

While a great many of these reptiles have remained dwellers upon the land, others have adopted a kind of double life, spending part of the time in the water and part on the land. The well-known Terrapins have been inhabitants of fresh water for a very long time. The sea turtles have developed from land forms. Just why they left their land homes for the great deep we have no way of knowing. It may have been for food, as an escape from enemies or just to try out new experiences.

As climates changed and new types of animals came upon the land, the body of the turtles changed. The ribs of some kinds lengthened and flattened to form a foundation for a hard armor covering; the limbs had separate toes enabling the owners to walk, climb, grasp or leap as was needed. Many kinds developed the bones of necks and limbs until they were capable of being pulled back within the armored case at the approach of an enemy.

The ancient turtles did not have these protections against dangers. They wore only a leather jacket while the limbs were great, soft paddles with the toes hidden in a mitten of skin. There is one group of this kind of turtle living in the sea today. It is known as the Leatherback or the Luth. The people living along the Massachusetts coast sometimes have the thrill of gazing upon one of the Leatherbacks.

Lured by the quantity of food in the warm waters of the Gulf Stream, one of these gigantic dwellers of the warmer waters occasionally wanders far from home enjoying the crustaceans, jellyfish and cuttlefish upon which it feeds. Where the Gulf Stream branches off east of Massachusetts to cross the Atlantic Ocean, the cold arctic waters rush in. The Leatherback, not being accustomed to cold waters, is numbed

and becomes confused. Unless its instinct heads it back into the Gulf Stream again it is apt to be caught by the fishermen.

The task of landing a Leatherback is a most difficult one as a specimen may be six feet long and weigh around a thousand pounds. Sometimes, the combined strength of a dozen men is needed to bring the huge reptile to shore. Once there it is only a curiosity. The flesh is not at all good in flavor and is considered unwholesome to eat. The eggs however are eagerly sought by the peoples of the warmer parts of the Atlantic where the Leatherback is at home. They are looked upon as a great delicacy.

Once a year, the mother Leatherback leaves the sea and with difficulty hitches herself up the sandy beach beyond the reach of waves. There she digs a hole with her long front flippers and deposits her eggs. The powerful back flippers serve as shovels for covering up the eggs. Then she returns to the sea, leaving the eggs for the sun to hatch. The baby Leatherbacks push their way up through the sand and head directly for the water.

At that time, their leathery jackets are soft and thin. Later they become tough and somewhat thicker. The jackets are made of a substance much like the oily blubber of the whale and have hundreds of tiny, bony plates embedded within. These fit closely together. In seven places they lift and push the leathery outside up into ridges, or keels, running lengthwise of the body. But in no Leatherback Turtle do the bones of the back and ribs become solidly attached to the outer covering, or carapace, as is the case in all other turtles.

This leather covering, a short neck and a bony roof over the head are the chief differences between this living fossil and most other turtles. In the sea it is a dangerous reptile due to its powerful seal-like flippers (which give it great speed) and the enormous size it often attains.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall 18, on the first floor, are many kinds of turtles. The Soft-shelled Turtle is frequently called the "Leatherback" but the word is incorrectly used. The Soft-shell is a dweller of the fresh water and so is not a sea turtle.

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THE SWISS LAKE DWELLERS

It is impossible to say when man first began to use wood for his house, but it is thought that the Lake Dwellers were the first. Remains of their settlements have been located in Ireland, Italy and Switzerland.

As long ago as 12,000 years and as recently as the time of the Romans, Switzerland was the homeland of a people who built huts on platforms over the waters of some of its lakes. Deeply buried in the mud have been found parts of their homes and objects they used. These show the Swiss Lake Dwellers to have been an industrious people who passed from the Age of Polished Stone to that of Copper and Bronze and who became extinct in the Iron Age.

The favorite location for a lake settlement seems to have been the sunny side of a shallow lake with a nearby strip of land and a protecting hill in the background. As many of the people were shepherds as well as farmers and fishermen, the land provided pasture for the cattle and space for the raising of flax, wheat, millet and barley. Loaves of wheat and millet bread and parched barley show how they used these grains. Their farming was quite simple. Instead of plow and harrow, they used sharp digging sticks and deer antlers with which to scratch the soil in which the seeds were planted.

The flax raised was somewhat different from that we use today. Clothing, fishnets and seines were made of this material. Clay spindle-whorls were used for twisting the raw flax into thread. Several skeins of yarn neatly bound up ready for use were found with some of the spindles. Frequently other kinds of fiber were woven or platted in with the flax for color or to make the material water-proof.

Two kinds of settlements were used by the Swiss Lake Dwellers. The best-known type was built on piles. Birch, beech, fir, pine and oak tree trunks were brought from the forest, sharpened at one end, hardened in a fire and driven into the lake mud with massive mallets or flattened stones. On these piles was built a floor of planks, held in place with wooden pins or set in deep cuts. On this floor were constructed the huts. Some were close together; others were arranged in clusters with space between the clusters. The walls of the huts were made of wattles of twigs filled with clay and the roofs were thatched. Some of the platforms almost touched the shores, while others were so far out as to need bridges to connect them with the land.

The second type of settlement was far from shore and built upon artificial islands of stones or layers of twigs, mud and tree trunks.

Boats were used for transporting the materials. One boat heavily loaded with stones sank and from it we learn that the Swiss Lake Dwellers made their boats by hollowing out tree trunks just as some of the Pacific Coast Indians do today. When the desired amount of stones needed for the island had been secured, a few piles were driven along the outside of the mass to hold the stones in place. Then the huts were erected and life went on secure from land enemies.

Each hut had its stone hearth. This was usually of rough sandstone and was placed either in the center of the hut or in a corner. Just how much cooking of food was done, we do not know. Many, small, blackened clay pots with food still clinging to the sides have been found, so they must have known how to prepare food that way.

Wherever remains of settlements have been uncovered, there also have been found the bones of dogs, sheep, goats, pigs and cows. On the same platform with some of the huts, but separated by a short space, were shelters for their cattle and places for storing the food necessary to carry the animals through the cold winter. Grasses and ferns seem to have been the most common food for the animals.

Deeply buried have been found bones of a very large kind of pike and fish-hooks made from wild boar tusks, as well as javelins cut from the bones of birds and small mammals. The barbs on some of the latter show these people to have been skilful hunters as well as expert fishers. The refuse heaps give us some idea of their other foods. Seeds of blackberries, raspberries and strawberries are mixed with charred apples and pears. Nuts were plentiful.

We know that their first metal objects were made in the form of their stone tools and weapons, and from metals obtained in trade. Later, the Swiss Lake Dwellers mined and worked their own metal. The bronze articles are of excellent workmanship. It was not until the Romans, with their use of iron, came among them that these interesting people passed from the regions they had claimed so long.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall C, on the ground floor, is a large case showing the Swiss Lake Dwellers, their huts and family life. Two small cases show objects and human bones found in the mud of Lake Neuchâtel.

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